

FLN Networker No. 280: April 24, 2019

The FLN Networker is a publication of the Fire Learning Network—a partnership of the USDA Forest Service, agencies of the Department of the Interior and The Nature Conservancy—intended to foster communication within the network and among its friends. Submit comments, information to share, and subscription requests to Liz Rank.

For more about the FLN, visit www.conservationgateway.org/fln or contact Marek Smith.

News from the Field

Arkansas: When rain, rain and more rain—and **flooding—in Nebraska** made the **Loup River TREX** impractical, **TREX coaches** and **Arkansas partners stepped up** for the international participants who had already committed to the travel. On very short notice, the **Arkansas TREX** was organized, resulting in great training opportunities—and a capacity boost for nearly 1,700 acres of good burning. See the attached *Notes from the Field* for some highlights.

California: A great FAC Net blog post by **Will Harling** (will@mkwc.org) and **Jill Beckman** relates a story that starts back in 2013, when the **Western Klamath Restoration Partnership** got going. [Read](#) “Show Your Partners You’re Listening. Literally! How We’re Using **Values-Based Spatial Planning** to Visualize and Prioritize Collaborative Forest Restoration.” **It’s working** for WKRP.

California: The **Karuk Climate Adaptation Plan** is now [available online](#). (From this landing page you can also explore their other climate change projects, in areas ranging from climate vulnerability assessments to knowledge sovereignty to fire as medicine.)

Florida: **Women in fire** were in the news in Florida last month, with the **WTREX and an all-female Conservancy-led burn** taking place simultaneously—by coincidence. “Women on the Firelines” (on nature.org) covers both events very nicely, and **Lenya Quinn-Davidson** (lquinndavidson@ucanr.edu) reflects on the WTREX in the FAC Net [blog post](#) “Indulging in Fire: Reflections from the Women-in-Fire Training Exchange.” The *Tallahassee Democrat* also posted a [photo gallery](#) from a WTREX burn at Tall Timbers.

Montana: With a **launch workshop** in mid-March, **Fire Adapted Montana** has joined FAC Net. See their [FAC Net member profile](#) to learn more about this new **state-wide network** with 10 communities of focus.

Washington: In a recent Northwest Public Broadcasting [story](#), **Reese Lolley** (rolley@tnc.org) talked about “How Land Managers Select Prescribed Fire Areas”—and the state’s **20-Year Forest Health Strategic Plan**.

Washington: The **Cascadia TREX** kicks off on Sunday. For a little background, see the DNR [press release](#), then **follow along** during the event on the **Washington Prescribed Fire Council** [Facebook page](#).

Resources: Traditional Knowledge / Radio Communication / Ignition Techniques / Fire Behavior / Burns

Traditional Knowledge: The [research brief](#) “Community Conversations: Applying Traditional Knowledge to Fire Management and Research” (from the **California Fire Science Consortium** and the **Northern Rockies Fire Science Network**) captures some lessons from a pair of workshops held in Montana in 2012 and 2014. The authors “highlight some **challenges and solutions** in applying **traditional knowledge and Western knowledge** to current approaches of wildland fire, fuels and natural and cultural resource management.”

Radio Communication: The **Northern Rockies Fire Science Network** [research brief](#) “Wildland Fire Radio Communication—Common **Myths and Best Practices**” identified some of the shortfalls of current training in radio communication, and makes **practical suggestions** to fill the “training and practice gap” between basic theory and real-life use.

Ignition Techniques: The **Great Plains Fire Science Exchange** has a new [video](#) that gives a quick **five-minute overview** of prescribed burn ignition techniques for grassland burning.

Fire Behavior: The Fire Behavior **Field Reference Guide** ([FBFRG](#); [PMS 437](#)) now lives on the **NWCG website**.

Burns: Quick **safety reminders** here—see the attached communication from **CAL FIRE**, which reported **four burn injuries** during pile burning over a **five-day period**. And Jeremy Bailey adds a reminder for spring burners, that “many burns on your calf happen this time of year when our use of drip torches and walking across our broadcast units increase. Remember—**if your pant leg catches fire** from drip torch mix, **pull your flaming pant away from your leg** and **then press the fabric between gloved hands.**”

Articles: Ecology and Society / Fire Economics & Policy / Mycorrhizae

Ecology and Society: The [latest issue](#) of this journal includes a number of intriguing articles.

- While the [article](#) “Social License Through Citizen Science: A Tool for Marine Conservation” focuses on marine issues, the introduction includes a discussion of the terms **social license**, **citizen science** and **community engagement**.
- The [article](#) “Review of Factors Influencing **Social Learning** Within Participatory Environmental Governance” is primarily a narrative review, but there’s also a table briefly summarizing the factors.
- The [article](#) “Adapting **Wildland Fire Governance to Climate Change** in Alaska” is based on the analysis of 41 interviews with fire managers.
- In the [Insight](#) section, authors from the Department of Forest and Rangeland Stewardship (Colorado State University) and Workforce Program (University of Oregon) review the range and importance of **scale-related challenges and solutions** in environmental governance in “Policy Tools to Address Scale Mismatches: Insights From U.S. **Forest Governance.**”

Fire Economics & Policy: The Forest Service has published “[Proceedings](#) of the Fifth International Symposium on Fire Economics, Planning, and Policy: Ecosystem Services and Wildfires.” The symposium (held in Honduras in November 2016) had a wide range of papers, including topics such as fuel **treatment effects on suppression costs**, household **willingness to pay** for wildfire risk reduction, and wildfire **protection prioritization**.

Mycorrhizae: The title of the [article](#) sounds innocuous enough: “Shifts in Dominant **Tree Mycorrhizal Associations** in Response to Anthropogenic Impacts.” But the human factors alluded to—**nitrogen deposition**, **fire suppression**, **climate change**—have shifted the balance of types of mycorrhizal tree groups with “critical consequences for forest productivity, ecosystem carbon and nutrient retention, and **feedbacks to climate change.**”

Perspective: Dancing on the Volcano

The [essay](#) “Dancing on the Volcano: Social Exploration in Times of Discontent” (*Ecology and Society*) explores the **connections** among our **current social, political and environmental upheavals**. The authors discuss building “**general resilience**” and other ways to navigate our current collective state of disequilibrium and, ultimately, see **reason for hope** in this state as the “**beginning of shared work** toward a better planet than we now have.”

Jobs: Research Associate / Engine Boss

Research Associate: The **Colorado Forest Restoration Institute** is seeking a research associate to manage tasks and contribute to a program of work in adaptive management, collaborative monitoring, and ecological research for **forest landscape restoration and wildfire risk co-management**. Details are on the Colorado State University jobs page ([posting 201900342AP](#)); applications are due by **May 9**.

Engine Boss: **Lomakatsi Ecological Services** is hiring an NWCG-qualified **wildland engine boss** to join their fire management team based in Ashland, Oregon. Details are on their [website](#); applications are due by **May 20**.

Webinars

May 2
new listing

New Reforestation Practices for Post-Wildfire Landscapes: Building Early Resilience

11:00 Pacific / noon Mountain / 1:00 Central / 2:00 Eastern

Jens Stevens will be the presenter on this Northern Rockies Fire Science Network webinar. Information: <https://www.nrfirescience.org/event/new-reforestation-practices-post-wildfire-landscapes-building-early-resilience>

May 7
new listing

Climatic Controls on Post-Fire Regeneration and Growth in Ponderosa Pine and Douglas-fir

11:00 Pacific / noon Mountain / 1:00 Central / 2:00 Eastern

Kimberley Davis will be the presenter on this Northern Rockies Fire Science Network webinar. Information: <https://www.nrfirescience.org/event/climatic-controls-post-fire-regeneration-and-growth-ponderosa-pine-and-douglas-fir>

May 8
new listing

Wildland Firefighter Fatalities in the Context of Prescribed Fire

10:00 Pacific / 11:00 Mountain / noon Central / 1:00 Eastern

Travis Dotson of the Wildland Fire Lessons Learned Center will be the presenter on this webinar from the North Atlantic Fire Science Exchange and Lake States Fire Science Consortium. Information: <http://www.firesciencenorthatlantic.org/events-webinars-source/2019/5/8/webinar-wildland-firefighter-fatalities-in-the-context-of-prescribed-fire>

May 10
new listing

Bringing Non-Profits, Communities, and Federal Agencies Together for Restoration and Monitoring

10:00 Pacific / 11:00 Mountain / noon Central / 1:00 Eastern

This webinar will highlight collaborations and case studies developed through a partnership between Trout Unlimited and the Forest Service.

Information: <https://www.eventbrite.com/e/bringing-ngos-communities-feds-together-for-restoration-and-monitoring-registration-59616042187>

May 29

Hot Burns, Cold Burns, and Everything In Between: Exploring Prescribed Burning's Impacts on Forest Structure in the Appalachians

11:00 Pacific / noon Mountain / 1:00 Central / 2:00 Eastern

In this **FLN** webinar, Jean Lorber will give a short presentation about new fire monitoring results; this will be followed by case studies of individual burn units, presented by the folks that burned them, to showcase a range of fire intensities and talk about why the units burned the way they did. Join the webinar:

<https://tnc.webex.com/tnc/j.php?MTID=mbf07c315242f99eb3ef9259be168998d>

Network Workshops & Field Tours

- April 22-26** **Fire Adapted Communities Learning Network Workshop / Ashland, OR**
FAC Net core members and key partners are meeting at this national workshop.
- May 14-16**
deadline **Southern Blue Ridge FLN / Athens, TN**
Join partners for the 14th annual workshop of this regional network. The registration deadline is **April 26 at noon**.
Details and registration: <https://nature.us6.list-manage.com/track/click?u=d249918d68e8b2816d484693a&id=5f4d5b8e0c&e=0d23243b0e>
- November 4-8** **Annual FLN Leaders-TREX Coaches-IPBN Workshop / Russellville, AR**
FLN network leads, TREX coaches and IPBN leads will meet at this joint national workshop.

FLN Prescribed Fire Training Exchanges (TREX)

- April 28-May 10** **Cascadia Prescribed Fire Training Exchange / Cle Elum, WA**
The deadline for this TREX has passed.
- April 29-May 3** **Loess Hills Cooperative Burn Week / Council Bluffs, IA**
The deadline for this event has passed.
- April 29-May 10** **Central Oregon Prescribed Fire Training Exchange**
The deadline for this TREX has passed.
- May 13-24** **Ashland Prescribed Fire Training Exchange**
The deadline for this TREX has passed.

Conferences, Workshops, Training, Etc.

- May 4** **Wildfire Community Preparedness Day / Everytown, USA**
Information: <https://www.nfpa.org/Public-Education/Campaigns/National-Wildfire-Community-Preparedness-Day>
- May 7-8**
new listing **Northern California Prescribed Fire Council Annual Meeting / Humboldt, CA**
Register by **May 1**.
Information: <https://www.eventbrite.com/e/northern-california-prescribed-fire-council-spring-meeting-2019-tickets-60447135008>
- June 2-5** **North American Prairie Conference / Houston, TX**
Information: <http://www.northamericanprairie.org/>
- June 3-7**
new listing **Wildland Fire Fighter Type 2 Training Courses and Field Day / Bristol, FL**
The Nature Conservancy will be hosting this training, which includes the courses needed for becoming a FFT2 (S-190, S-130, L-180, I-100).
Information: <https://www.eventbrite.com/e/wildland-fire-fighter-type-2-training-courses-and-field-day-tickets-60128489932>
- June 4-5** **Oregon Prescribed Fire Council Annual Meeting / Lakeview, OR**
The council will meet at the Fremont-Winema NF headquarters; topics will include cross-boundary fuels treatments and navigation of the state's newly revised smoke management rules.
Information: <https://www.facebook.com/events/2046390858992771/>

- June 6** **North Georgia Prescribed Fire Council / Jasper, GA**
Workshop page: <http://www.garxfire.com/events.htm>
- July 23-25** **Fire in Eastern Oak Forests Conference / State College, PA**
"Laying out a Restoration Road Map" is the theme of this conference organized by the Oak Woodlands & Forests Fire Consortium and Consortium of Appalachian Fire Managers and Scientists, in partnership with the Pennsylvania Prescribed Fire Council. The **early registration deadline** is **May 15**.
Information: <https://web.cvent.com/event/657273e9-143b-48ba-bcaf-0f04177312d5/summary>
- August 21-23** **Transforming Approaches to Forests and Forestry through Traditional and Local Knowledges Conference / Vancouver, BC, Canada**
Information: <http://tek.forestry.ubc.ca/>
- October 1-3** **5th Biennial Shortleaf Pine Conference / Van Buren, MO**
Information: <http://www.shortleafpine.net/shortleaf-pine-initiative/conferences>
- October 21-24** **3rd Annual Cohesive Strategy Workshop / Plymouth, MA**
The call for workshop sessions and presentation proposals is open (through July 1).
Information:
https://www.iawfonline.org/event/2019_cohesive_strategy_workshop/
- October 21-Nov. 4** **Hart Prairie Preserve Workshop on Ecological Burning / Flagstaff, AZ**
This WEB will provide participants with the knowledge and training required to develop and implement prescribed burn plans with a focus on setting ecological objectives, and enhance the knowledge, skills and abilities needed to use fire in wildland ecosystems in a safe, professional and responsible manner.
Information: <http://www.conservationgateway.org/ConservationPractices/FireLandscapes/HabitatProtectionandRestoration/Training/TrainingExchanges/Documents/WEB-2019-HartPrairie-Announce.pdf>
- Nov. 18-22** **Cultivating Pyrodiversity: The 8th International Fire Ecology and Management Congress / Tucson, AZ**
Information: <http://afefirecongress.org/>

Send News, Links & Comments

Heather Montanye – hmontanye@tnc.org – Heather is out April 29.

Jeremy Bailey – jeremy_bailey@tnc.org – Jeremy is in Vermejo Park, NM April 27-May 4; McCall, ID May 6-10.

Marek Smith – marek_smith@tnc.org – Marek is in Ashland, OR April 22-26; out April 29; Athens, TN May 13-16.

Mary Huffman – mhuffman@tnc.org – Mary is out April 26-29; in Winnipeg, Canada May 5-10 and Sun River, OR May 13-17.

Wendy Fulks – wfulks@tnc.org – Wendy is in Ashland, OR April 21-26; Austin, TX April 30-May 3.

Liz Rank (editor) – lrnk@tnc.org – Liz is out April 26, May 10.

Full Links

News from the Field—CA—WKRP: <https://fireadaptednetwork.org/show-your-partners-youre-listening-literally-how-were-using-values-based-spatial-planning-to-visualize-and-prioritize-collaborative-forest-restoration/>

News from the Field—CA—Karuk: <https://karuktribeclimatechangeprojects.wordpress.com/climate-adaptation-plan/>

News from the Field—FL—Both events: <https://www.nature.org/en-us/about-us/where-we-work/united-states/florida/stories-in-florida/all-women-controlled-burn/>
Blog post: <https://fireadaptednetwork.org/reflections-from-the-women-in-fire-training-exchange/>
Photos: <https://www.tallahassee.com/media/cinematic/gallery/3236884002/prescribed-burns-led-by-women-at-tall-timbers/>

News from the Field—MT: <https://fireadaptednetwork.org/member/fire-adapted-montana/>

News from the Field—WA—Reese Lolley: <https://www.opb.org/news/article/how-land-managers-select-prescribed-fire-areas/>

News from the Field—WA—TRES—Press release: <https://www.dnr.wa.gov/news/prescribed-fire-training-gives-firefighters-skills-improve-forest-health-increase-community>
Facebook: <https://www.facebook.com/warxfirecouncil>

Resources—Traditional knowledge: https://www.nrfirescience.org/sites/default/files/CAFSC_NRFSN_TraditionalKnowledge_ResearchBrief_2019.pdf

Resources—Radio communication: https://www.nrfirescience.org/sites/default/files/NRFSN_ResearchBrief5_RadioComm.pdf

Resources—Ignition techniques: <https://www.youtube.com/watch?v=02wRmuURU8s>

Resources—Fire behavior: <https://www.nwcg.gov/publications/pms437/>

Articles—*Ecology and Society*: <https://www.ecologyandsociety.org/vol24/iss1/>

Articles—Fire economics & policy: https://www.fs.fed.us/psw/publications/documents/psw_gtr261en/psw_gtr261.pdf

Articles—Mycorrhizae: https://www.srs.fs.usda.gov/pubs/ja/2019/ja_2019_oswalt_001.pdf

Perspective—Dancing on the volcano: <https://www.ecologyandsociety.org/vol24/iss1/art23/>

Job—Fire program manager: <https://thewatershedcenter.com/work-with-us/>

The Fire Learning Network is supported by *Promoting Ecosystem Resilience and Fire Adapted Communities Together: Collaborative Engagement, Collective Action and Co-ownership of Fire*, a cooperative agreement between The Nature Conservancy, USDA Forest Service and agencies of the Department of the Interior.

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Arkansas TRES: The Fire Must Go On

Omaha, NE to Little Rock, AR
March 18-28, 2019

In the last weeks before the scheduled start of the Loup River TRES in central Nebraska, it became clear that a late, and exceedingly wet, spring would preclude any prescribed burning in the area. The decision was made to cancel that TRES, and re-focus local resources on taking advantage of any burn windows that might appear. However, a strong component of the planned TRES was an international exchange, with participants from Colombia, Mexico and Spain bringing their knowledge and perspectives to the Great Plains—and those 14 participants had already committed to their international travel. Within days, members of the TRES Coaches Network and partners in Arkansas had stepped up—to host burns and house crews, to shuttle people from Omaha to Little Rock, and to fill the many roles that make a successful TRES.

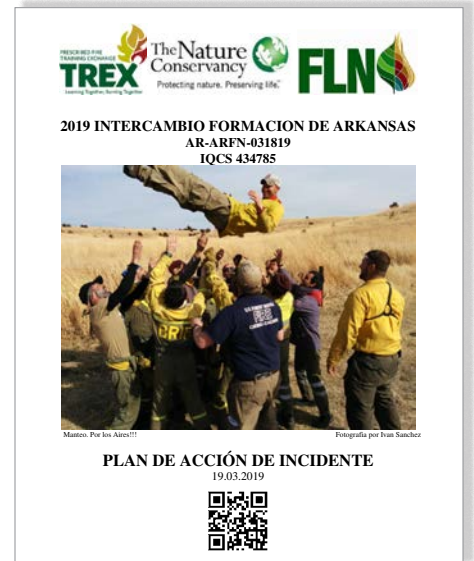
José Luis Duce, TRES Coach
Sr. Scientist, Spatial Informatics Group

The Arkansas TRES was 14 days of incredible time together and shared knowledge. We came together from four countries—Colombia, Mexico, Spain and the United States—and nine agencies. And we shared more than 150 hours full of ecology, presentations, high-quality classroom and field classes, walks, line digging, patrol and mop-up. Innumerable moments of shared emotions, sweat, smiles, anecdotes and lessons about fire and life. Throughout the time, I saw friendship, positive attitudes, a willingness to learn, and enthusiasm and love for fire, for this profession and for those around us.

And fire—1,667 acres of good fire. Fire to restore grasslands, and open spaces among the shortleaf (*Pinus*

echinata) and loblolly pines (*P. taeda*). Fire among oaks (*Quercus* spp.). Fire to protect watersheds and sequester carbon. Fire for fuel management and hazard reduction and plantation management. And fire to improve wildlife habitat in different ecosystems in Arkansas, from the West Gulf Coastal Plain in the south, to the Ozarks in the north. Head fire, backing fire, flanking fire. Fire on the plains, fire on those “terrible but incredible” slopes. Even fire and water up to our knees in the swamps.

The group of 14 fire practitioners converged in Omaha, Nebraska on March 16, just as the state was experiencing record-high river levels and flooding. We were met by Gabriel Cahalan and Lydia Zowada from The



Incident Action Plan for the Arkansas TRES, which was conducted primarily in Spanish

Nature Conservancy (Maryland and Colorado chapters, respectively), and we then drove to Little Rock, Arkansas, where Kyle Lapham and his Conservancy fire crew were waiting, to welcome us and start the Arkansas TRES 2019.

The first day consisted of an orientation with Conservancy staff—Kyle Lapham (fire manager), Gabe De Jong (ecologist), Douglas Zollner (science director)—and NOAA meteorologist Dennis Cavanaugh, who introduced us to the fire program,



There were lots of briefings, starting with an introduction to “life at a TRES,” before traveling down to Arkansas. © Emilio del Pino



Safety first! Participants prepare to practice deploying fire shelters.

© Emilio del Pino



At briefings, burn boss Kyle Lapham delivers great knowledge, setting objectives and highlighting safety. © Emilio del Pino

ecology and weather in Arkansas. Those new to TRES also met Phil Dye, who would lead the Planning Section.

By the end of the two weeks, we had racked up hundreds of miles through four states. Hours of strenuous effort and good team work, and all with positive energy among the TRES fire family. We saw—and took part in—the incredible fire and land management efforts by the Arkansas fire team, a good example of partnership among different institutions.

It took great effort to make this TRES possible, and to do so in record time. It was only possible with the care, human touch, and commitment and support from the whole TRES network. And now, a piece of us and our heart is still in the Arkansas landscape—we give thanks for that.



The crew conducts a test fire at one of the Central Arkansas Water units. A test fire, ignited in a representative location in a unit, helps to check whether the fire behavior is appropriate to meet burn plan objectives. On another day, we learned a lot from a 'no go' test fire result at the Cottonmouth Creek Unit.
© Emilio del Pino

Gabriel De Jong leads first-order fire effects monitoring on the East Lake Unit. This exercise gave everyone a good sense of the protocols used and the desired effects of "good fire" in this landscape.

© Emilio del Pino



A crew protects some trees used by red-cockaded woodpeckers. © Inmaculada Ibar



The crew pauses at the end of ignitions at Lundsford Corner. © Angel Larriba



Unit / Complex	Acres
Warren Big North	857
East Lake 4	164
Lundsford Corner	171
Cottonmouth Creek	no-go
Devil's Eyebrow	475
TOTAL	1,667



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<http://nature.ly/trainingexchanges>

Prescribed Fire Training Exchanges are part of *Promoting Ecosystem Resilience and Fire Adapted Communities Together*, a cooperative agreement between The Nature Conservancy, USDA Forest Service and agencies of the Department of the Interior. For more information about PERFECT, contact Marek Smith at marek_smith@tnc.org.

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SAFETY COMMUNICATION

Pile Burning Injuries

In the past week, there have been four burn injuries suffered during pile burning operations statewide.

- On March 27, 2019, in the Amador El Dorado Unit (AEU), an inmate firefighter suffered a burn injury to the hand while adding fuel to a burn pile. Treatment continues for the burn injuries.
- On March 28, 2019, in the Tulare Unit (TUU), an inmate firefighter suffered burn injuries to the torso, arm, and leg while adding fuel to burning piles. The injuries continue to be treated at the burn center.
- On March 28, 2019, in the Butte Unit (BTU), a California Conservation Corp Crewmember suffered burns to due to standing too close to a burn pile.
- On March 31, 2019, in the Sonoma Lake Napa Unit (LNU), a CAL FIRE employee suffered burn injuries to the neck and chin.



With the increased emphasis on fuels reduction projects, personnel will be more engaged in these operations. It is critical that steps are taken to minimize the risks associated with pile burning and prescribed firing operations.

Brief personnel to the potential hazards during pile burning, including unnecessary exposure to radiant heat, mitigating radiant heat, and reporting unsafe conditions.

Although prescribed fire projects are *controlled* burning operations, risk management measures need to be taken as seriously as an active wildland fire.

Reduce burn injuries by:

- **Backing away when you “feel” heat penetrating your protective clothing!**
- Ensuring drip torch fuel is properly mixed with the correct ratio.
- Ensuring personnel are trained on safe response to changes in fire intensity and are aware of the potential to be caught in a hazardous situation.
- Utilizing all Personal Protective Equipment (PPE) appropriately and ensuring a proper fit.
- Understanding the limitations of your PPE.
- Being aware of the contact points between PPE and your body.
- NOT overfilling drip torches.
- Rotating personnel frequently to minimize the exposure to radiant heat.
- Reviewing and reinforcing standard operating procedures for firing operations. Know the Plan and follow the Plan.
- Treating and reporting all injuries immediately per policy.



STATEWIDE 2019-01